

ABSTRACT

A compressor for compressing a gas comprises an impeller wheel (1) including a plurality of vanes (4) rotatably mounted within a housing (2). The housing (2) has an inner wall defining a surface (5) located in close proximity to radially outer edges (4a) of impeller vanes (4). The compressor inlet comprises an outer tubular wall (7) extending forming a gas intake and an inner tubular wall (8) extending within the outer tubular wall (7) and defining an inducer portion (10) of the inlet. An annular gas flow passage (11) is defined between the inner and outer tubular walls. There is at least one downstream aperture (13) communicating between the annular flow passage (11) and the surface (5) of the housing (2) swept by the impeller vanes (4) and at least one upstream aperture communicating between the annular flow passage (11) and the inducer or intake portions of the inlet. A plurality of inlet guide vanes (14) are mounted within the inducer portion (10) of the inlet downstream of the at least one upstream aperture to induce pre-swirl in gas flowing through the inducer portion of the inlet.